*Jeannette* (*Pandora*) will be ready for sea in a short time, and then sail for Havre, where a temporary crew will be shipped, when she will leave for San Francisco. Mr. Bennett hopes the expedition will sail for the North in June, 1879. It will go by the route through Behring's Straits.——Prof. Nordenskiöld's expedition for the north-east passage sails in the *Vega*, in July.—— The vessel *Eothen*, with twenty-five men, will sail from New York in July for the Arctic regions in search for the relics of Sir John Franklin.

## MICROSCOPY.[1]

Determination of rocks by the Microscope.—At the regular meeting of the San Francisco Microscopical Society, May 16th, Mr. Melville Atwood presented twenty-two rock specimens illustrating a new method of preparing the same for determination, and read a very interesting paper on the subject. He is aware that looseness in petrological nomenclature is the rule and not the exception, and that many geologists are found writing of totally different rocks under the same name. But he is still more impressed with the ignorance of the miners in regard to the rocks which form the boundaries of the different mines. He does not value much any distinction between rocks which cannot be applied in the field, and he found, while making a collection of rock specimens prepared in different ways, that what was most wanted was a method to make it easy for his fellow-miners to understand and distinguish the enclosing and wall rocks of the different lodes they were working—these rocks having so much to do with the productiveness of the lodes. To prepare rocks so that they can be easily studied with a pocket lens or a low power of the microscope and accurately identified by comparison with a collection of foreign types, they are prepared as follows: "First wash the specimen clean, using a brush to get rid of any clay and dirt; then select the side or part you wish to examine, and grind it down on a piece of sandstone (a shoemaker's sharpening stone) until a perfectly flat surface is obtained. This will occupy but a few minutes unless the rock is very hard. The surface should then be worked down still finer with a square emery file, using water, and after you have obtained a sufficient polish, wash the rock again and then let it dry gradually, either on a stove or, what is better still, a little brass table with a spirit lamp, the same that is used for heating slides. When perfectly dry heat it again to a point so that you can barely handle it; then varnish the polished side while hot with a mixture of one part of Canada balsam to three parts of alcohol, which must be warmed before applying it, and laid on with a camel's hair brush. It will soon dry, and if left for a day or two will harden, so that you can handle it without injury." This simple and rough treatment is

[1] This department is edited by Dr. R. H. Ward, Troy, N. Y.

described as remarkably successful in making plain the characteristics of the rocks.

OLEOMARGARINE.—Mr. John Michels has recently studied this substance, and drawn its appearance under the microscope. The abundant fat globules and occasional crystals of common salt which are found in real butter are almost entirely wanting, and in their place are found an abundance of large feathery crystals and of fragments of animal tissues. As the fat is merely liquified and set free by a heat not exceeding 120° Fahrenheit, and manipulated so as to have the general appearance of butter, any germs of disease or embryos of parasites it may have contained are liable to be preserved alive and transferred to the systems of those who make use of the substance. He therefore considers the oleomargarine, though for cooking purposes an excellent substitute for any fat previously used, to be eaten in a raw state as a substitute for table butter only at considerable risk.

Mr. E. J. Wickson described at the San Francisco Society the character of oleomargarine cheese. The cream from the milk is removed, and then liquid oleomagarine stirred in to replace the fat thus taken away. The mass is agitated, and rennet enough added to form a curd quickly before the oil can separate from the skim milk, in order to form an emulsion of oil and a menstruum of solid casein, like that which exists in cheese from natural milk. This process has succeeded so well that chemical analysis has shown the artificial cheese richer than the genuine, and so great an improvement on skimmed cheese that large quantities are sold in New York and shipped to Europe. Under the microscope this artificial preparation, on account of the imperfect emulsion formed, shows cavities of irregular shape in which the artificially introduced fat was imprisoned when the curd was formed, instead of the smooth mixture of fat globules found in cheese from full cream milk.

A RARE SALE.—The microscopes, objectives, accessories and objects of the late distinguished and critical microscopist, John E. Gavit, are now offered for sale by his son, W. E. Gavit, of Stockbridge, Mass., from whom catalogues and particulars can be obtained.

EXCHANGES.—The San Francisco Microscopical Society is now enabled, by the kindness of the State Geological Society, to offer return exchanges of Pacific Coast diatomaceous deposits on receipt of any valuable microscopical material.

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## SCIENTIFIC NEWS.

— Professor Joseph Henry, of the Smithsonian Institution, died May 13th, at Washington, of Bright's disease of the kidneys. Professor Henry was born in Albany, N. Y., on the 17th of December, 1797. At the end of a course of study at the common